



INMOTION ENERGY (OPC) PRIVATE LIMITED

Mud Balance

Premium 4-Scale Mud Balance, Metal — Complete with Hard Carrying Case

Model No: IM-MB-140MS

INSTRUCTION MANUAL

Updated 07 January 2026

Ver. 1.0

Inmotion Energy (OPC) Private Limited

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli, Bangalore, Karnataka – 560076

Tel: +91 96637 44619 | info@inmotionenergy.in | inmotionenergy.in

© Copyright Inmotion Energy (OPC) Private Limited 2026

Table of Contents

Introduction3

Description3

Components4

Features.....5

Specifications5

Operation6

Calibration8

Maintenance9

Troubleshooting.....10

Warranty and Return Policy11

Ordering & Replacement Parts.....12

Company & Contact Information12

Introduction

Wellbore pressure control depends on knowing exactly how much a drilling fluid weighs. Even a small, unnoticed shift in mud density can throw off the balance between formation pressure and hydrostatic pressure, so crews check this property constantly — often multiple times per shift.

A mud balance makes that check simple. It's a compact mechanical instrument that needs no batteries, no power source, and no external calibration equipment beyond ordinary fresh water, yet it delivers a repeatable density reading in under a minute.

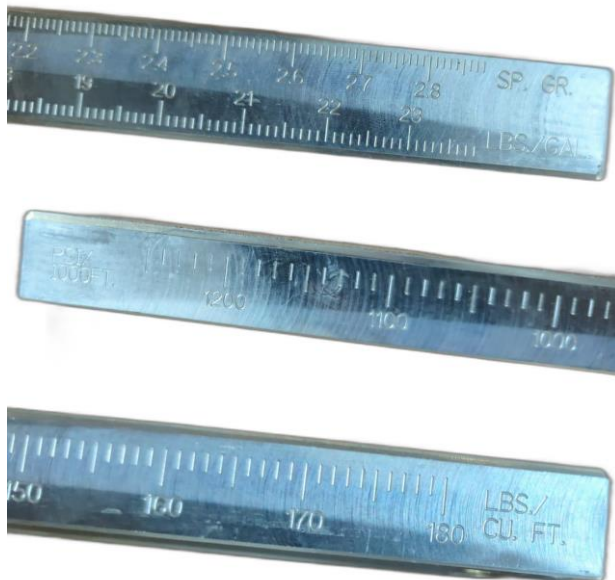
Description

The Inmotion Mud Balance works on a simple lever principle. A cup of fixed volume sits at one end of a graduated beam; a fixed weight is built into the opposite end. A small rider slides along the beam's scale until the two ends come into equilibrium, which is confirmed visually by a bubble vial mounted on top of the beam.

A knife-edge pivot underneath the beam rests in a cradle on the base (or directly in the carrying case) while a reading is taken. The cup is closed off with a lid that has a small vent hole, so that a small amount of fluid is always pushed out as the lid seats — this guarantees the same fill volume test after test.

One instrument, four scales — the beam is etched with:

- 6.0 – 23.8 lb/gal (pounds per gallon)
- 0.70 – 2.88 specific gravity
- 44 – 180 lb/ft³ (pounds per cubic foot)
- 300 – 1,250 psi/1,000 ft



lb/gal, specific gravity, lb/ft³, and psi/1,000 ft graduations etched on the beam

Components

Part Number	Description
IM-MB-140MS-01	4-Scale Mud Balance (w/o case)
IM-MB-140MS-02	Machined Arm, Hard-Anodized Aluminium
IM-MB-140MS-03	Rider (Sliding Weight)
IM-MB-140MS-04	Level Bubble Vial
IM-MB-140MS-05	Lid, Zinc/Aluminum Alloy
IM-MB-140MS-06	Base, Zinc/Aluminum Alloy
IM-MB-140MS-07	Knife Edge
IM-MB-140MS-08	Shotwell (Calibration Weight Well)
IM-MB-140MS-09	Steel Shot, Calibration Weight Set
IM-MB-140MS-10	Hard Carrying Case

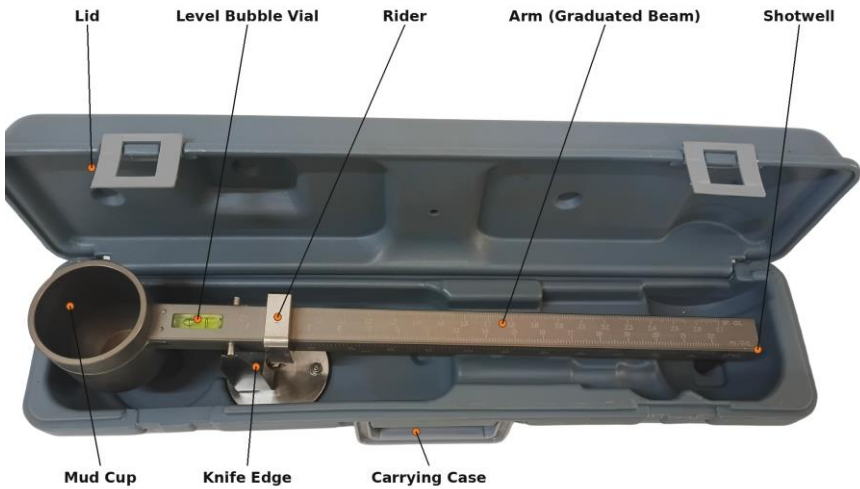


Fig. 1 — The Inmotion Mud Balance, complete with hard carrying case, with major components labeled

Features

- **Material** — Constructed from heavy-duty zinc/aluminum alloy for long-lasting, dependable performance in the field.
- **Machined Construction** — Precision machining ensures greater consistency between units and simplifies calibration.
- **Corrosion Resistant** — The hard-anodized, smooth aluminum beam is easy to clean and resists corrosion in harsh field environments.
- **Easy-to-Read Scale** — Laser-etched graduations provide clear, accurate readings every time.
- **Complete Kit** — Supplied with a hard carrying case for safe transport and storage between field and laboratory use.

Specifications

Pounds per Gallon	6.0 – 23.8 lb/gal
Specific Gravity	0.70– 2.88
Pounds per Cubic Foot	44 – 180 lb/ft ³
Pressure Gradient	300 – 1,250 psi/1,000 ft
Accuracy	± 0.1 lb/gal or ± 0.01 specific gravity
Material of Construction	Aluminium alloy base and lid; hard-anodised aluminium beam
Applicable Standard	API RP 13B-1 / ISO 10414-1.
Case	Hard carrying case (included), doubles as working base
Overall Dimensions (approx.)	21.5" × 4.5" × 4" (55 × 11 × 10 cm)
Weight (approx.)	7 lb 11.46 oz(3.5kg)

Operation

1. Set the base on a flat, level surface — the carrying case itself works well for this.
2. Take the fluid's temperature and log it on your mud report.
3. Draw a fresh sample and fill the cup right to the brim.
4. Twist the lid on with steady, gentle pressure.



Lid with center vent hole — fluid weeps out here as it seats fully home

✓ TIP

A little fluid should weep out through the vent hole as the lid seats fully home — that's your sign the cup is truly full with no trapped air. If nothing comes out, lift the lid and top up before trying again.

5. Keep a finger over the vent hole and rinse any spilled fluid off the cup and beam, then dry the whole unit completely.
6. Set the knife edge onto its pivot and slide the rider until the beam settles level, confirmed by the bubble centering in the vial.
7. Take your reading from the scale edge of the rider closest to the cup.



Rider and graduated beam at the cup end — read from the scale edge closest to the cup

8. Wipe the instrument down and dry it before putting it away.

⚠ IMPORTANT

Drilling fluids, cements, and completion brines can be caustic or irritating on contact. Gloves and eye protection should be worn any time samples are handled.

Reporting Results

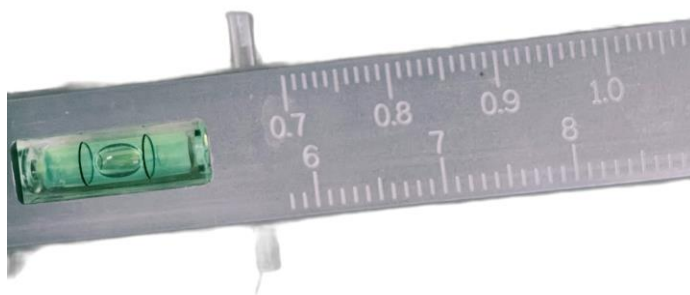
Round the reading to the nearest 0.1 lb/gal, 1 lb/ft³, 0.01 SG, or 10 psi/1,000 ft — whichever unit your report calls for.

Calibration

Basic Calibration

Every unit leaves the factory calibrated with its original lid fitted. A quick fresh-water check like the one below is good practice before any critical test run, and confirms the instrument hasn't drifted.

1. Wipe the instrument down and make sure it's completely dry before you start.
2. Fill the cup with clean fresh water at roughly room temperature (about 70°F / 21°C).
3. Rest the knife edge on its pivot and set the rider to 8.33 lb/gal — equivalent to 1.00 SG or 62.3 lb/ft³.
4. Watch the bubble. A centered bubble means the instrument is in balance; an off-center bubble means it isn't.



Bubble vial centered on the beam — this confirms the instrument is balanced

✓ TIP

Small drift can often be corrected just by nudging the rider — roughly 0.1 lb/gal or 0.01 SG either way — before you touch the shot.

5. Unscrew the shotwell from the end of the beam.
6. Bubble sitting toward the cup? Take a little shot out. Toward the shotwell end? Add a little shot back in.
7. Thread the shotwell back on and repeat the balance check until the bubble sits dead center.

When to Recalibrate

- Whenever the lid or any other non-consumable part is swapped out.
- After a drop, impact, or any other physical damage.
- If a fresh-water check no longer lands on 8.33 lb/gal (1.00 SG).
- On whatever routine schedule your facility's QA/QC program calls for.

⚠ IMPORTANT

Swapping in a different lid can shift the instrument's balance point, even if the new lid looks identical. Re-run the calibration check whenever the lid changes.

Maintenance

1. Give the knife edge, rider, and bubble vial a quick look-over before each test — the vial should be clear and crack-free.
2. Rinse the instrument after every test; a mild solvent helps if cement or other stubborn residue is involved. Nothing should be left clinging to any surface.
3. Dry everything completely before putting it away.
4. Keep the balance in its carrying case between uses — the knife edge and beam graduations are easy to damage if left loose.
5. Any time a part is swapped or readings start looking off, run through the Calibration check again (page 8).

NOTE

Never dunk the assembled balance in water — clean the cup and lid on their own if they need a deeper wash. And handle the beam gently; a bent arm from a drop or knock will throw off every reading afterward.

Troubleshooting

Symptom	Possible Cause	Recommended Action
Beam won't settle level, even with the rider pushed to its limit	Too much or too little shot in the shotwell	Run the fresh-water check under Calibration (page 8)
Readings bounce around between tests	Cup wasn't quite full, or air got trapped inside	Refill the cup and make sure fluid weeps out through the vent hole as the lid seats
Rider won't stay put, or slides too easily	Beam surface worn or damaged	Check the beam closely for wear; reach out to Inmotion Energy about a replacement
Hard to tell where the bubble is sitting	Vial is dirty, damaged, or fouled with residue	Clean the vial and beam; swap the vial if it's cracked or clouded
Pitting or corrosion showing up on the beam or base	Instrument wasn't dried thoroughly, or was exposed to something corrosive	Make cleaning and drying after every use a habit (see Maintenance, page 9)

Still stuck after trying the above? Set the instrument aside and get in touch with Inmotion Energy (see Company & Contact Information, page 12).

Warranty and Return Policy

Warranty

Inmotion Energy (OPC) Private Limited stands behind the materials and workmanship of every instrument it ships. For eighteen (18) months from the invoice date, if a product turns out not to meet its stated specifications through no fault of the buyer, and we're notified in writing once the issue is found, we'll repair or replace it at our discretion, subject to the exclusions below.

This coverage assumes normal use, in line with the operating conditions described in this manual. It does not stretch to cover use outside those conditions, nor to flaws that were plainly visible on arrival but went unreported.

Beyond what's stated here, Inmotion Energy doesn't offer any other express or implied warranty — including, to the extent the law allows, implied warranties of merchantability or fitness for a particular purpose.

Coverage does not extend to damage or loss caused by:

- Installation, operation, or upkeep that doesn't follow this manual
- Misuse, carelessness, or accidental damage
- Adjustment or repair carried out by anyone other than Inmotion Energy or an authorized service provider
- Storage conditions or exposure beyond what normal field use implies
- Parts or components sourced from outside Inmotion Energy
- Ordinary wear items — the bubble vial and calibration shot, for example

Returns and Repairs

Pack anything you're sending back carefully — Inmotion Energy can't take responsibility for damage caused by inadequate packaging in transit.

If you're returning a unit that isn't defective, do so within thirty (30) days of your invoice; a restocking charge may apply, and the item needs to arrive in its original condition to qualify for a refund.

Before shipping anything back, reach out to us with your invoice number, a description of the issue, and your contact details so we can set expectations. Send equipment to:

Inmotion Energy (OPC) Private Limited

Attn: Service & Repair

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli

Bangalore, Karnataka – 560076, India

Questions before then? Reach our support team at info@inmotionenergy.in.

Ordering & Replacement Parts

Send the Inmotion Energy sales team a note about what you're working on, and we'll get back with a recommendation and a quote. Spares and calibration shot are kept in stock and shipped on request.

Have this ready when you reach out:

- Model / catalog number (IM-MB-140MS)
- The part number and description you need (see Components, page 4)
- How many you need
- Your company name, shipping address, and a contact point

Company & Contact Information

Inmotion Energy has spent years supplying precision testing instruments and drilling tools to operators working with drilling fluids, cements, and completion fluids. Working out of our Bangalore facility, we serve customers across India and the Middle East. Being an independent manufacturer means our customers come first, not a parent company's agenda.

Industries We Serve

- Onshore & offshore drilling contractors
- National & independent oil companies
- Mud engineering & testing laboratories
- Well completion & workover operations

Why Choose Us

- Every unit goes through rigorous checks before it ships
- Spares and replacements move fast, so downtime doesn't stack up
- Designs proven in the field, built to keep working

Contact Details

Inmotion Energy (OPC) Private Limited

186, 1st Main Road, Vijaya Bank Layout, Bilekahalli, Bangalore, Karnataka – 560076

Phone: +91 96637 44619

Email: info@inmotionenergy.in

Website: inmotionenergy.in